TEXTILE TECHNOLOGY DIGEST

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ABSTRACTS

FIBERS A

Fibers for the future: symposium

Textile Ind. 119: 87-102 (Jan. 1955).

Man-made fibers, by J. B. Goldberg; *Cotton,* by Leonard Smith, and *Wool,* by Giles E. Hopkins.

NATURAL FIBERS A 1

1954 cotton

J. M. Cook. *Textile World 105:* 78-79, 139 (January, 1955).

Fiber and spinning tests on 1954 cotton from all major growing areas indicate that this year's crop has about the same fiber strength and is a little finer, that yarn strength is about the same, and that yarn appearance is down.

Treatment of flax for spinning on cotton equipment

J. Gautier. *Industrie Textile:* 237-241 (April 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 761 (October 15, 1954).

The method described makes it possible to prepare flax fibers so as to process them on cotton machinery without previous combing. The equipment for washing and drying as well as for cleaning the retted fibers can also be used for processing retted ramie, jute, etc. The process (still in the laboratory stage but with promising potentialities) consists in eliminating the pseudo-soluble elements in the retted flax straw by rolling it between drying rollers, re-wetting and rerolling three or four times to express this residue. The fibers separate easily from the stalks and from each other, the colloidal cement between them being to a large extent removed. Further processing is thus facilitated.

Mechanical characters of jute. Part 8. Elastic properties of filament

K. R. Sen. *Jute Bull. 17:* 168-172 (August, 1954).

Mechanical characters of jute. Part 9. Yarn standard

K. R. Sen. *Jute Bull. 17:* 200-203 (September, 1954).

Ramie

S. G. Willimot. *Fibres 15:* 401-403 (December, 1954).

A general survey of ramie cultivation and development. 14 references.

The initial resistance of crimped wool fibers to extension

C. M. van Wyk and J. J. Venter (Grootfontein College of Agriculture, Union of South Africa). *J. Textile Inst. 45:* T809-T820 (November, 1954).

Prior to processing, all forces to which a fleece is subject, such as its own weight and those applied to it when judging its various properties, act on a large number of fibers simultaneously; the force to which each separate fiber is subject is, therefore, extremely small. Thus any study of the mechanics of the properties, substance, and handle of a fleece resolves itself into an investigation of the response of fibers to small forces. This paper describes a study of the resistance, at zero load, offered by crimped wool fibers to uncrimping by extension. This study has been extended to crimped steel wires. The relative importance of various factors in causing differences in crimp extensibility of Merino wools generally is discussed. 11 references.

Some observations on the histology of keratin fibers

B. Manogue, M. S. Moss and R. L. Elliott. *J. Soc. Dyers Colourists 70:* 502-505 (November, 1954).

Sections of several different wool and hair fibers have been given chemical treatments alleged to isolate the subcuticle membrane. The residues consist of parts of the cuticle, cortex, and medulla. The cortex residue is made up of cortical cell nuclei, fibrils, and thin membranes located at the boundaries of the cortical cells. These membranes are more resistant to treatment with sodium hydroxide solution and sodium sulfide solution than the major part of the cells, but are dissolved by proteolytic enzymes. The membranes are probably

the material hitherto termed "intercellular cement." 32 references.

Some observations on different fleece types in Scottish blackface sheep

J. N. Peart and M. L. Ryder (Wool Industries Research Assoc.). *J. Textile Inst. 45:* T821-T827 (November, 1954).

A study of fleece fibers and follicle populations in soft coated and hard coated Blackface sheep. 5 references.

MAN-MADE FIBERS A 2

Fiber data sheets: recognition and differentiation of the various types of chemical fibers

P. A. Koch. *Fibres 15:* 405-409 (December, 1954).

10 references.

Arnel

Celanese Corp. *Textile World 105:* 82-83 (January, 1955).

Physical properties and general data are tabulated for Arnel, new cellulose triacetate fiber. Fabric characteristics and special features are discussed.

Use of nylon in the rubber industry. Part 2

H. C. Mersereau. *Can. Textile J. 71:* 69-74 (December 17, 1954).

The properties that make nylon important for the rubber industry are reviewed. Nylon uses in tires, belting, coated fabrics, footwear, hoses, etc., are surveyed.

Man-made fibers in the rubber industry. Part 2

J. W. Illingworth. *Fibres 15:* 395-399 (December, 1954).

A more detailed consideration of tire cord materials is given in part 2, including the problems of fatigue resistance, growth and set of fibers and heat shrinkage. The latest developments in the use of high tenacity rayon yarns are also discussed.

Alarm from the East: Vinylon

Kurashiki Rayon Co. *Chem. Week 75:* 64-67 (December 25, 1954).

Production and future possibilities of Japan's polyvinyl alcohol fiber Vinylon manufactured by the Kurashiki Rayon Co.

Synthetic fibers from Japan

Textile Wkly. 54: 617-622 (October 1954).

The good and bad features of a Vinyl viscose suit are discussed. Vinylon and oth Japanese synthetic fibers are described.

Rayon and synthetic fibers in Japan

Rayon and Synthetic Fibres (Japan): 11- (1954).

History of development, production, proce ing, and export are covered.

Properties, spinning and uses of Wolcrylon

L. Rudolph. *Textil- u. Faserstofftech. 4:* 47 486 (August, 1954); *in German.* Throug *Brit. Cotton Ind. Research Assoc. 34:* 8 (1954).

In this review the author discusses the histor technological and physical properties, spinnin and uses of the new Wolcrylon fiber whose hig crease-resistance, dimensional stability, and hea retaining capacity make it a valuable raw materi for use in admixture with rayon staple or woo 18 references.

YARN PRODUCTION

Causes of defects in spinning of colore yarn

K. F. Neuendorf. *Textil- u. Faserstofftech.* 487-491 (August, 1954); *in Germa* Through *Brit. Cotton Ind. Research Assoc.* 3 847 (1954).

Defects resulting from unsuitable storage o the combed material and damages occurring du ing blending dyeing, straightening, softenin carding, combing preparation, and spinning o the yarn are reviewed.

Causes of worsted-top irregularity

F. Anderson (Spinners Ltd. and Model Dy Works (Canada) Ltd). *Textile World 10* 86-87, 206-210 (January, 1955).

A listing is made of all the factors contributin to short-term and long-term top irregularity Seven general rules for reducing irregularity ar given.

Terylene polyester yarns and staple fibe

P. W. Carlene. *J. Textile Inst. 45:* P667-P67

(November, 1954).

The processing of Terylene on the worsted and the woolen systems.

OPENING, PICKING, FIBER PREPARATION B 1

Performance of blending feeders

Whitin Rev. 21: 30-33 (November-December, 1954).

Evolution of the spiked lattice apron, standard spiked aprons, and grid bar effectiveness are discussed.

Waste collector unit

Tweedales and Smalley Ltd. *Globe Rev. 1, No. 2:* 44-45 (1954); *Textile Merc.* 131: 1095, 1098 (December 17, 1954).

A convenient canvas bag method of removing trash extracted by the Shirley opener is described.

CARDING AND COMBING B 2

How to set cards. Part 1

P. C. Kochhar (Industrial Rayon Corp.). *Textile World 105:* 102-104 (January, 1955).

This article, the first of a series on card-grinder training, covers: gauges and tools needed, dismantling the card, leveling the card frame, and checking frame clearance. Consists of photographs and captions.

Quality control in wool carding

Textile Merc. 131: 1000-1002 (December 3, 1954); *Textile Recorder 72:* 86-88 (December, 1954).

The Autocount, a device which measures the density of wool web on a carding machine and controls the machine to produce woolen slubbings more uniform along their length than has previously been possible, has been developed by the Wool Industries Research Association. Features and uses are described.

The speed of the flat and the position of the flat stripper on the card in relation to the carding efficiency in cotton processing

H.-P. Hartenhauer. *Textil-u. Faserstofftech. 4, No. 6:* 329-332 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 759 (October 15, 1954).

The effects of varying flat speeds at various positions of the front flat stripper on the quality of the card fleece were examined and it was found that, in order to obtain a certain quantity of flat strip waste, the flat speed should be as high as possible. The amount of flat waste should not be reduced at the expense of a decreased flat speed, but by means of a narrower adjustment of the flat stripper. In practice, however, the flat stripping plates are often slightly bent and cannot always be satisfactorily adjusted.

DRAWING AND ROVING B 3

Bi-coil processing in the modern card room

Globe Rev. 1, No. 2: 55-65 (1954).

The development of bi-coil drawing frames in India. Photographs and tables of data.

Checklist for drawing

J. E. Allen. *Textile World 105:* 127 (January, 1955).

Processing troubles in drawing are tabulated under condition, result, and remedy.

3-over-4 slip draft conversion

Textile Ind. 119: 128-129 (January, 1955).

Slip drafting unit with friction drive top rolls for blending and drafting long staple yarn or a combination of long and short fibers.

Woolen ring frame spinning. Part 1

P. P. Townend and B. Jowett. *Wool Rev. 27:* 37-39 (December, 1954).

Some experiments are described to determine just where, between the front and back rolls, drafting takes place.

SPINNING, WINDING, TWISTING B 4

Balloon control. Part 3. Control of the collapsing balloon

P. F. Grishin. *Platts Bull. 8, No. 8:* 240-260 (1954).

Having previously examined the general balloon problem and its influence on yarn tension (see *TTD 11:* 288 (1954)) Part 3 of this paper is devoted to the theory of balloon control.

Controlled balloon spinning

Tweedales and Smalley Ltd. *Globe Rev. 1,* No. 2: 46-49 (1954); *Textile Mfr. 80:* 625-626 (December, 1954).

An outline of a method which enables large packages to be spun at high speed on ring spinning frames.

Reduction of the spinning balloon

A. Ternier. *Industrie Textile:* 567-569 (August, 1954); *in French.* Through *Brit. Cotton*

Ind. Research Assoc. 34: 846 (1954).

Different systems used for limiting the diameter of the balloon are briefly reviewed, and an anti-balloon device is described whose internal diameter is equal to the internal diameter of the ring and which is fixed in unchangeable position above the ringer holder. By leaving a convenient space between the anti-balloon ring and the maximum diameter of the tube that covers the spindle, it is possible to establish a ratio of 1:2 between the diameter of this anti-balloon ring and that of the ring, so that the diameter of the anti-balloon will be half of the ring on which the traveler moves. By using this device on a machine with 50-mm rings, the anti-balloon has a diameter of of about 25-mm, and the machine performs under the same conditions as that with a ring of 25-mm without an anti-balloon.

Electronic control applied to the woolen spinning mule. Part 1

B. E. King, N. H. Chamberlain and E. A. Mather (Leeds Univ.). *J. Textile Inst. 45:* T828-T852 (November, 1954).

A new type of woolen spinning mule has been designed and constructed in which the mechanical headstock, quadrant, and variable speed elements are replaced by electrical circuit equivalents. The control system of the mule is, in consequence, greatly simplified and reduced in size, besides being cheaper to construct. Additional advantages of the new system are greater flexibility, continuous instead of step-wise variation of the main spinning variables, and the ability to change from one set of spinning conditions to another easily and rapidly. Shorter cycle times, leading to increased production of most yarns, are also envisioned. Part 1 deals with the general lay-out and principles of the electronic control system and describes in detail the main drives and relay system. Photographs and diagrams.

Electronic control applied to the woolen spinning mule. Part 2

B. E. King, N. H. Chamberlain and E. A. Mather. *J. Textile Inst. 45:* T853-T870 (November, 1954).

Describes the voltage-shaping circuits and their application in controlling the magnetic-slip couplings of the carriage and spindle drives, the winding-on system, and the method of operating the faller and counter-faller wires in backing off.

Modern techniques in worsted spinning

H. Kittel. *Melliand Textilber. 35:* 1324-1327 (December, 1954); *in German.*

The author deals with the spinning operations and discusses the ring spinning frames of Zinser, Ingolstadt, Rieter, and Spinnbau (Perfekt).

Twist loss

M. C. Gross. *Textile World 105:* 132-13[illegible] (January, 1955).

The spindle assembly, tapes, and pulleys a[illegible] usually responsible for twist loss. Maintenanc[illegible] of these elements will keep twist loss to a min[illegible] mum. Traveler speed changes with the build-u[illegible] but twist loss is seldom more than 0.5 tpi. at th[illegible] slowest part of the cycle.

Whitin spindles. Part 7. Uptwister spindles

Whitin Rev. 21: 38-46 (November-Decembe[illegible] 1954).

Diagrams and tables are included.

Whirlwind 2-for-1 ply twister-winder

Deering Milliken Research Trust. *Textile Ind[illegible] 119:* 118-120 (January, 1955).

The new machine eliminates knots in 25-l[illegible] packages and delivers cord on a precision woun[illegible] package, performing both twisting and windin[illegible] operations simultaneously on a package that i[illegible] ready to ship to the customer.

Yarn winding and doubling developments

E. Dixon (Arundel, Coulthard and Co. Ltd). *Textile Wkly. 54:* 1726-1730 (November 26 1954); 1798-1799, 1802 (December 3 1954).

Features of Arunco winding and doubling machinery are discussed.

Features and adaptability of the woolen ringframe. Part 2

J. A. B. Mitchell. *Textile Mfr. 80:* 567-569 (November, 1954).

Knowing the diameter of the front roll and its rpm for a particular size of twist change-wheel and tin roll speed, it is possible to calculate the spinning rate per spindle or the lineal output of yarn from the rolls in unit time.

Spinning of ramie tow by the worsted process

G. Nitschke. *Textil- u. Faserstofftech. 4, No. 6:* 324-328 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 761 (October 15, 1954).

Attempts to spin ramie tow by the worsted method are reported. The material presented no difficulties during combing, but in order to ensure smooth operation on roving frame and to obtain satisfactory yarn, it was necessary to admix viscose staple fiber to the tow, the 50/50 per cent mixture having better spinning properties than the mixture consisting of 30 per cent staple fiber and 70 per cent ramie.

Flax spinning: theory and practice. Part 2. Machinery and equipment. Chapter 13. Twisting and threadmaking (continued)

A. V. Pringle. *Textile Quart. 4:* 104-113 (April-June 1954).

Simplified spinning of artificial fibers

R. Auffret. *Industrie Textile:* 252-255 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc.* 34: 760 (October 15, 1954).

In this article, the author discusses in general the application of the classical spinning method to mixtures of various fibers, and refers in particular to the French modification of the Stains system, some of its new features, and its advantages.

Spinning direct from sliver

J. Pfenningsberg and Co., Germany. *Textile Wkly. 54:* 1529-1530 (November 12, 1954).

The Pfenningsberg 4-roll super high draft system which eliminates roving processes is described. The RSK special ring frame is provided with the 4-roll super high draft system and with a special creel on which sliver cans of 9-11 inches in diameter and 12 inches high can be accommodated.

YARNS B 5

Handbook of twisting. Chapter 4. Part 2. Effect of twist on strength

N. Truslow. *Textile Bull. 80:* 67-70 (December, 1954).

Influence of twist on textile yarns

A. Webster. *Textile Mfr. 80:* 633-639 (December, 1954).

Consideration of the many factors affecting single and double twisting of single and folded yarns, also the effects of direction of twist, false twist and warp twisting.

A new yarn from superpolyamide

Industrie Textile: 569-570 (August, 1954). *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 847 (1954).

Process and device for producing continuous superpolyamide yarn (single or multiple) are described. The process consists in imparting to the yarn a supplementary twist of about 150-1500 turns per meter, and then subjecting it to a thermal treatment at 80-90°C for varying period (20 min. for a twist of 400 turns per meter). The yarn is finally made into loop-yarn (200-2000 or more loops per meter) on a loop-yarn twister, and can be dyed in different colors, before or after further processing.

Nylon stretch yarns

J. M. Morahan. *Modern Textiles Mag. 36:* 32-33, 41, 44 (January, 1955).

The story of the development and uses of the various nylon stretch yarns.

Wool and rayon twist yarns

Wool Record 86: 1510-1512 (December 23, 1954).

Composition and mechanical details are given.

FABRIC PRODUCTION C

The Fraser braider

Douglas Fraser and Sons Ltd. *Textile Merc. 131:* 1178 (December 31, 1954).

The machines are designed to produce five-strand braids of the type used in making rope-soled shoes equivalent to those produced with a figure-8 track on maypole braiders, but where in maypole braiders it is the supply bobbins which move and the braid reel which is mounted in stationary bearings, on the Fraser machines the reverse takes place.

Lace: most complex of all textile constructions

Rohm and Haas Rptr. 2: 19-24 (November-December, 1954).

A general review of modern lace making processes.

Production of blended worsted greys. Part 3

P. P. Townend and P. V. Beardsworth. *Textile Recorder 72:* 82-83 (December, 1954).

The authors give data on how the effect of successive additions of melanged top was produced and how the blends were processed.

WARPING, SLASHING, YARN PREPARATION C 1

ZaSe sectional warper

Benninger Engineering Co. Ltd., Switzerland. *Textile Wkly. 54:* 1920-1921 (December 17, 1954).

A modification of the ZA model (brought out in 1951) in which the drum, once the warp has been wound on, can be run out and moved immediately to the sizing machine, thus eliminating the beaming process. This warper with transportable drum can also be equipped with a beaming device, which is useful for beaming-off short runs or warps which need not be sized.

Homogenized size

W. A. Hewitt (Manton-Gaulin Mfg. Co. Inc.). *Textile Bull. 80:* 75-80 (December, 1954).

The Gaulin homogenization process is described.

Warping and beaming

W. Schlafhorst and Co., Germany. *Textile Merc. 131:* 766-768 (October 29, 1954).

Features of the new Schlafhorst range of warping and beaming equipment are described and illustrated.

Warp bobbins of chemical fiber yarns

J. Schneider. *Reyon, Zellwolle u. Chemiefasern No. 6:* 356-360 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 767 (October 15, 1954).

The disadvantages resulting from the use of the usual cheese-winding machines for winding synthetic yarns are briefly outlined and a modern precision cheese-winding construction, the model Mikromat of the Maschinenfabrik Sahm, is described. This machine has a thread-guiding drive without eccentric mechanism so that, owing to the reduction in oscillation, and to an almost complete release of the bobbin, the winding rate is doubled, resulting in increased output.

Variable speed range drives for slashing

C. E. Robinson and R. J. Farrell (Reliance Electric and Engineering Co.). *Textile Bull. 80:* 87-92 (December, 1954).

How to throw Dacron for tricot knitting

J. M. Wright (E. I. du Pont de Nemours and Co., Inc.). *Textile World 105:* 112-114 (January, 1955).

There are three methods of throwing Dacron: redrawing and uptwisting, down-twisting, and half and half (partial twisting on downtwisters, finish twisting on uptwisters). Oil is used on 70-denier yarn, wax on 40-denier. Warping procedure depends on what kind of packages are used.

Can the knot be improved?

J. P. Saladin. *Industrie Textile:* 563-565 (August, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 854 (1954).

The Mellor Bromley technique for joining, efficiently, difficultly knotting threads is described and illustrated.

WEAVING C 2

Aids to productivity in the woolen industry. Part 1

L. Bellwood. *Textile Mfr. 80:* 617-618, 63[illegible] (December, 1954).

Automatic weaving and automation in preparatory processes.

Automatic shuttle brake

R. Dumoulin. *Industrie Textile:* 571-572 (August, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 854 (1954).

A simple and efficient adaptation is described which consists in using two symmetrically arranged shuttle guides facing each other and pivoting at one point. Any impulse causing the shuttle to leave the box disengages the two guides, which are held in position by two helical springs, so that the shuttle is automatically released and is able to pass freely.

Continuous control of picks

C. Merlin. *Industrie Textile:* 575-576 (August, 1954); *in French.* Through Brit. Cotton *Ind. Research Assoc. 34:* 854 (1954).

The mechanism described consists of (a) an electrical interrupter moving with each shuttle movement or during the release of the shuttle for each pick, and (b) a rotating contact device actuated by the advancing cloth. The electric circuit comprises two independent electro-magnets, each having its own circuit-closing device. While these circuits are closed, the general circuit remains open and closes only at each pick of the shuttle.

Modern trends in weaving machinery

E. Cotterill (Courtaulds Ltd). *Can. Textile J. 71:* 61-64 (December 17, 1954).

A general review of weaving machinery changes in relation to cost and productivity. Unorthodox approaches to loom design are also reviewed.

Stroboscopic study of endless check straps

A. E. Chouinard. *Modern Textiles Mag. 35:* 31, 46, 48 (December, 1954).

The purpose of this investigation was to compare the characteristics of a one-piece standard width strap with those of a four section multiple type strap in order to determine if either construction has any particular advantages. Stroboscopic pictures show the important portions of the cycle when the stick is in contact with the strap. Reprinted from the November 1953 *Bulletin of the Lowell Technological Institute.*

New dobbies for double velvet and plush looms with two shuttles

O. Jansen. *Textil-Praxis 9, No. 6:* 542-543 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 768 (October 15, 1954).

The new open-shed dobby loom, model DS (patent applied for), developed by the Jean Gusken GmbH at Dulken is described and illustrated. The machine, which has positively lowered and lifted heddle shafts, is provided with sixteen shaft-lifting levers, each of which can operate in three positions.

Plant development notes: 1954 series. Part 8

Brit. Rayon & Silk J. 31: 78-79 (October, 1954).

Aids to efficiency in the weaving shed. Three successful loom mechanisms and a new beam carrier.

Position stopping

Draper Corp. *Textile Age 18:* (December, 1954).

Position stopping on Draper looms is described. Other improvements on the Draper XP-2 wide sheeting loom and the X-2 model are also discussed.

Weaving faults recorder of the Diessner construction

A. Hothorn. *Textil- u. Faserstofftech. 4, No. 6:* 363-364 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 769 (October 15, 1954).

The hand-operated device (described and illustrated) makes it possible to measure simultaneously and mark all warp- and weft-yarn breakages while the piece of cloth passes over the control board. The apparatus is provided either with one counter and one frequency recorder, or with two counters and one frequency recorder.

Weaving of seamless bags

J. Nery. *Industrie Textile:* 579-580 (August, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 855 (1954).

The process described consists in weaving the bags, in two layers, transversely at the rate of one or two bags per width, the two sets of cloth forming the two faces of the bag. When the required length of the bag is attained, the two layers are joined together for several picks forming a connecting band closing the sides of two consecutive bags. A clear space in this band or a colored pick indicates the line for cutting the products apart. This band can be made with special shuttles containing a thread of different materials (e.g. gummed).

KNITTING C 3

Fine tricot knit fabrics with three guide bars. Part 1

J. B. Lancashire. *Knitter 18:* 48-51 (December, 1954).

Discussion of pleated fabrics and other fabrics that involve the use of a plain presser during every revolution of the cam shaft.

Geometric approach to hosiery sizing and fitting

W. E. Shinn. *Knitter 18:* 41-47 (December, 1954).

The purpose of this study was to provide a more objective approach to a method whereby hosiery will be sold on the basis of measurements taken from the customer's legs and then selecting from existing stocks the hose most likely to give satisfaction. Interest is centered in the area lying between the ankle and the picot or extreme edge of the hosiery top. Tables, charts, graphs.

Knee-length full-fashioned hosiery

S. Boyer. *Textile Ind. 119:* 149-153 (January, 1955).

Existing equipment in the Wisteria Hosiery Mills was adapted to the production of knee-length hosiery. The complete production is described in detail.

Movement timing and control. Part 5. Straight-bar bearded needle machines

J. B. Lancashire. *Textile Recorder 72:* 77-79 (December, 1954).

Reducing needle streaks

J. H. Blore. *Textile World 105:* 121 (January, 1955).

Needle streaks in jersey fabrics give little trouble when frictionless needles are used, needles are kept under control, and regular cleaning schedules are kept.

Simplex glove fabrics

F. Schmidt (Regent Knitting Mills Ltd). *Textile World 105:* 130-131 (January, 1955).

Knitting and finishing details for several fabrics produced on the two-needle-bar tricot machine.

Spring needle knitting machine

Precision Knitting Machine Co. *Textile Ind. 119:* 144-147 (January, 1955).

Description of experience with spring needle machine in knitting 28-gauge balbriggan.

FABRICS C 4

Engineered blends for tomorrow's fabrics

A. J. Weldon. *Papers Am. Assoc. Textile Technol. 10:* 34-50 (December, 1954).

Systematic studies were made by du Pont of some 140 worsted type fabrics. These included tropicals, year-round weights and heavier fabrics up to 12 ounces per yard. Selected combinations of Dacron, Orlon and nylon with each other and with rayon, acetate and wool were systematically investigated in 2 x 2 worsted twills of approximately 8 oz./yd. Fibers in all cases were 3 denier per filament, cut to 2½-inch staple length and spun on the American system. Yarns were all spun to equal diameters rather than to closely controlled constant yarn count in order that the fabrics could be woven to the same end and pick construction. All of the fabrics were given the same finishing treatment to arrive at a final construction of approximately 70 ends by 50 picks. Throughout the study, every effort was made to control or eliminate extraneous variables so as to assess inherent relationships between blend composition and fabric properties. Various blends are discussed in detail and an elaborate color-coded chart summarizes blended fabric properties.

Laboratory and service evaluation of synthetic tropical fabrics

J. J. Press. *Papers Am. Assoc. Textile Technol. 10:* 9-19 (December, 1954).

Four fabrics (100% Dacron, 55% Dacron-45% wool, and two modifications of a 50% Dacron-50% viscose blend with different finishes) were wear-tested for use in the naval officer's summer uniform. Tailorability, durability, wrinkle recovery (wet), crease retention (wet), stiffness, burn hole incidence, and pilling were measured. Tables and photographs.

A study of synthetic fur ruffs

R. M. Ellis, Jr. Wright-Patterson Air Force Base, Ohio, Wright Air Development Center, July, 1954. 44 p. WADC Technical Report 53-333.

Laboratory and field tests were conducted on synthetic wolverine furs. Natural wolf fur was used for comparison. In both laboratory and field tests the better synthetic furs were superior to the wolf fur in ice shedding ability. In addition, the synthetic fur is domestically and readily available and should cause no storage problems. In wind protection and comfort to the wearer the natural fur appeared to be superior.

Let's talk about seams

I. Zagiel (Massachusetts Inst. of Technology). *Modern Textiles Mag. 35:* 32-33, 68, 71-72 (December, 1954).

A study of the mechanism of the failure of the fabric at the seam is discussed, using type 301 stitch with type LSA-1 seam. Photographs and diagrams.

Textile scaffolding threads. Part 34

A. Johnson. *Skinner's Silk & Rayon Record 28:* 1190-1191 (November, 1954).

In this article, which concludes the present series, the author discusses other possible uses for alginate rayons. References.

Cloth setting reconsidered: practical cloth setting

S. Brierley. *Textile Mfr. 80:* 630-631 (December, 1954).

Some observations on fabric hand and on cloth setting formulas.

Ply herringbone mixture

Am. Textile Reptr. 69: 15, 29-31 (January 13, 1955).

Less yarn breakage, more production per loom, low labor cost and a wide variety of weaves are advantages. Layout details for a viscose-acetate blended fabric are given.

Preparation of rayon crepe fabrics

D. Mende. *Textil- u. Faserstofftech. 4:* 501-507 (August, 1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 855 (1954).

In this article, the author discusses the manufacture and properties of crepe yarns, causes and elimination of wrinkling, properties of the rayon thread before and after twisting as compared with those of the rayon crepe yarn, preparation for and processing of the crepe yarn in the weaving room, weaving techniques, and finishing of the crepe fabrics.

Design in woven structure. Part 25. Moss crepe weaves

D. C. Snowden. *Wool Rev. 27:* 43-45 (December, 1954).

Further studies in textile design. Part 11. Extra weft figuring

Textile Recorder 72: 80-81 (December, 1954).

Influence of woven structures on knitwear design

W. Davis. *Textile Merc. 131:* 1060-1064 (December 10, 1954).

FINISHING AND CHEMICAL PROCESSING D

Alphabetical list of new products developed since November, 1953

Am. Dyestuff Reptr. 43: 805-836 (December 6, 1954).

Brief descriptions of products placed on the market or further developed since November 1953 are arranged under the headings: coloring materials, chemicals, and equipment.

Highlights of the past year in dyeing and finishing

P. J. Wood (Royce Chemical Co.). *Am. Dyestuff Reptr. 43:* 877-879 (December 6, 1954).

New machinery and equipment are described.

Textile finishing developments. Part 1. Natural and synthetic fibers

Textile Wkly. 54: 1956-1958, 1968 (December 17, 1954); 2030-2035 (December 24, 1954).

A review, with references to the literature, of developments of the past year.

Blends of wool and man-made fibers. Part 4. Dyeing and finishing

Textile Recorder 72: 74-76 (December, 1954).

Seventy-five years of dyeing and finishing

Dyer 112: 775-855 (November 12, 1954).

Dyeing of cotton and cellulosic fibers: retrospect to 1879, by H. A. Turner, p. 775-781; *Review of progress in rayon dyeing,* by C. C. Wilcock, p. 782-786; *Wool dyeing in the last 75 years,* by C. L. Bird, p. 787-792; *Advance of hosiery dyeing,* by A. W. Carpenter, p. 793-802; *75 years of roller printing,* by G. S. Hibbert, p. 803-807; *Bleaching 1879-1954,* by F. L. Barrett and A. E. Stubbs, p. 808-812; *Progress in the finishing of woolen and worsted fabrics,* by C. S. Whewell, p. 813-819; *Seventy-five years' development in cotton finishing,* by K. A. Stott, p. 820-822; *Developments in textile chemicals,* by A. F. Kertess, p. 825-833; *Development of dyes and dyeing methods for cellulose acetate,* by R. K. Fourness, p. 835-849; *Dyeing and finishing nylon stockings,* by P. Andrew, p. 851-855.

An investigation of the properties of cyanoethylated cotton

AATCC. Rhode Island Section. *Am. Dyestuff Reptr. 43:* P774-P779 (November 22, 1954).

The object of this investigation was to study the effect on Azoton (originally temporarily designated T-7) of various bleaching, dyeing, printing and finishing operations normally employed on cotton, and in particular, to measure the stability of the -CN groups when subjected to various chemical treatments. The affinity of the new fiber for the different classes of dyes was determined, and the fastness of the resultant dyeings to light, washing, etc., was compared with that on cotton. The resistance of Azoton to microorganisms was also studied. 19 references.

Dyeing and finishing of Orlon

J. L. Beadle. *Textile Merc. 131:* 919-921 (November 19, 1954).

CHEMICAL PROCESSES D 1

Effects of alkali in scouring and bleaching textiles

Textile Mfr. 80: 640-643 (December, 1954).

Consideration of the inter-effects of chemicals and fibers under varying conditions of application. Points dealt with include removal of cotton impurities, oxidation of cellulose, effect of alkali on hypochlorite bleach, alkaline peroxide bleaching baths, copper stains from alkaline bleach liquors, etc. 7 references.

Peroxide bleaching

D. A. Clibbens *(Letter to the editor). J. Textile Inst. 45:* T871-T872 (November, 1954).

The author comments on a paper, "Hydrogen peroxide," by C. N. Satterfield in the July 5, 1954 issue of *Chemical and Engineering News.*

Textile finishing developments. Part 2. Bleaching

Textile Wkly. 54: 2080-2084 (December 31, 1954).

A review, with references to the literature, of recent bleaching technology developments.

Present development of water-proofing finishes. Part 2

R. Keppler. *Textil-Praxis 9, No. 7:* 646-647 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 820 (October 30, 1954).

In this review the author discusses one and two bath water-repellent impregnations (based on emulsions of soap, paraffin and aluminum or zirconium salt), the use of resins and silicones, and water-repellency tests. 36 references.

Theory and practice of enzymatic desizing

J. Voss. *Melliand Textilber. 35, No. 7:* 762-764; *No. 8:* 876-880 (1954); *in German.*

Through *Brit. Cotton Ind. Research Assoc. 34:* 775 (October 15, 1954).

A method is described in which a re-precipitated starch preparation was used to study its degradation by bacterial, pancreatic and malt amylases as desizing agents and the factors affecting it (concentration of the enzymes, temperature, particle size of the starch, etc.). The results indicate that, in practice, it is desirable to maintain the temperature as high as possible but, should the nature of the enzyme used not permit it, the starch should be pre-swollen with hot water so as to make it more easily accessible to the enzymic action.

Niagara continuous rope washing machine

Mezzera Soc. per Azioni, Milan, Italy. *Dyer 112:* 705-707 (October 29, 1954).

A new machine for washing of dyed and printed fabrics in rope form. It is a development of the normal winch type machines used for washing. The goods move at high speed and are subjected to a beating motion which is stated to increase the efficiency of the treatment and also effect a considerable reduction in time.

Carbonizing investigations. Part 1. A review of the literature

D. H. Simmonds. Australia. Commonwealth Scientific and Industrial Research Organization. Wool Textile Research Laboratories. 1954. 12p. Available from Library of Congress, Publication Board Project, Washington 25, D. C. Microfilm $2.00, Photocopy $2.75. PB 115 333.

A critical survey has been made of the wool carbonizing processes which have been described in the literature. The processes employing HCl and $AlCl_3$ are described briefly, and that using H_2SO_4 is described in detail. Laboratory control, sources of trouble, and investigations of the mechanism of carbonizing in the H_2SO_4 treatment are discussed. (Abstract through *J. Appl. Chem. 4:* 794 (December, 1954)).

Application of the silicone resins to textile fabrics

F. Fortess. *Papers Am. Assoc. Textile Technol. 10:* 20-32 (December, 1954).

This paper describes the silicone resins which are based on the natural polymer silica and their specific application to textiles. It includes (1) the chemical nature of the silicones and the specific requirements for application to fabrics; (2) the commercially available silicones for textile finishing purposes; (3) the general methods of preparation of finish emulsions and optimum methods of application and curing; and (4) the various fabric properties influenced by the silicones in addition to durable water repellency.

Modification of urea-formaldehyde and melamine-formaldehyde crease-resistant finishes with polymeric latices

E. Abrams and N. H. Sherwood. *Am. Dyestuff Reptr. 43:* P780-P784 (November 22, 1954).

Polymeric latices, in mixtures with various urea-formaldehyde and melamine-formaldehyde resins, have been applied to cotton chambray to develop a crease-resistant finish with good physical characteristics. Modification of a urea-formaldehyde formulation with a butadiene-acrylonitrile latex and also with a polyacrylic ester latex in the ratio of 70 parts latex to 30 parts urea-formaldehyde results in a highly crease-resistant fabric. The tearing, breaking, and bursting strengths of these treated fabrics show a marked improvement over these properties in fabrics treated with urea-formaldehyde alone. In addition, the abrasion resistance of fabrics containing latex-modified urea-formaldehyde is excellent. Moreover, the tendency of urea-formaldehyde-treated fabrics to retain chlorine during laundering is markedly reduced. 6 references.

Wrinkle-resistant finish for cellulosic fabrics

T. F. Cooke (American Cyanamid Co.). *Am. Dyestuff Reptr. 43:* P891-P896 (December 20, 1954).

A wrinkle-resistant finish for cellulosic fabrics obtained with melamine resins using a newly developed accelerator is described. With this accelerator there is a reduction in the loss in tensile strength and yellowing of melamine-formaldehyde-treated cellulosic fabrics during chlorine bleaching. It also greatly improves the efficiency of the resin. 6 references.

Some fundamental considerations on the anti-crease treatment of cellulosic fabrics

C. van Bochove and G. L. Schuringa. *Teintex 19, No. 7:* 505-518 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 779 (October 15, 1954).

The principles of creasing, chemical aspects of creasing, and the effect of anti-crease treatment on the properties of the fabric as a function of its molecular construction are reviewed, and the value of various anti-crease methods is discussed. A new process is suggested, according to which long

flexible cross-linkages are introduced into the cellulosic molecules. A particularly suitable compound comprises the reaction product of an aliphatic di-carboxylic acid diamide with formaldehyde. The process has already been applied on a semi-industrial scale with satisfactory results. 34 references.

DYEING AND PRINTING D 2

Dyeability of modern synthetics

J. G. Kern (Allied Chemical and Dye Corp.). *Am. Dyestuff Reptr. 44:* P22-P28 (January 3, 1955).

The dyeing of synthetic fibers is reviewed, with emphasis on acid dyes.

Dyeing of materials for plain and face-finished auto fabrics

M. G. Morris. *Dyestuffs 40:* 245-252 (December, 1954).

This discussion is confined to wool, cotton, rayon and nylon as the fibers most widely used in auto fabrics today.

Factors of influence on temperature control in the dyehouse

L. Walter. *Dyer 112:* 1093-1097 (December 24, 1954).

Individual dyehouse requirements should determine choice of automatic control instruments.

Investigations into the dyeing of hydrophobic fibers. Part 2. The use of dyeing assistants

T. Vickerstaff. *Hexagon Digest No. 20:* 7-17 (October, 1954).

The general conclusion drawn from this examination of dyeing assistants is that they function by loosening up the molecular structure of the fiber and so increasing the rate of dyeing. Their action is essentially the same as that of increasing temperature, and as a rough generalization the use of an assistant is equivalent to a 10-20°C. rise in temperature. Clearly the use of high temperatures is the more satisfactory method of dyeing these new fibers in that much greater increases in dyeing rate can be achieved.

Leveling unevenly dyed material

V. T. Hartquist (Philadelphia Section, AATCC). *Am. Dyestuff Reptr. 43:* P839-P875 (December 6, 1954).

The objective of this paper was to provide the dyer with information regarding the means of promoting migration by the use of special methods or auxiliaries. The investigations were instigated by such considerations as the need to level uneven dyeings on wool or protein fibers instead of stripping them by chemical discharge so as to preserve hand and tensile strength. Since vat-dyed cotton cannot be discharged, an effective leveling method was also desirable for that fiber. With regard to hydrophobic fibers, a solution was needed for the high cost of stripping in terms of chemicals, machine corrosion and loss of large quantities of dyestuffs. Migration systems were studied with various classes of dyestuffs on wool, cotton, nylon, Dynel, Acrilan, Dacron and Orlon. In all, sixteen classifications covering innumerable auxiliaries and chemicals were tested, and evaluations are shown in tables, graphs, and windings of the relative effect of these on migration. 19 references.

Dyeing of polyacrylic fibers

W. Kunze. *Textil-Praxis 9, No. 7:* 660-662 (1954); *in German.* Summary in *Brit. Cotton Ind. Research Assoc. 34:* 817 (October 30, 1954).

Dyeing of polyvinyl chloride fibers

G. Stamm. *SVF Fachorgan Textilveredlung 9, No. 6:* 257-263 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 777 (October 15, 1954).

Directions are given for dyeing Rhovyl and Thermovyl fibers (in form of loose staple fibers, card slivers, yarns and piece goods) and mixtures of Thermovyl and nylon (Rhovylon) and Thermovyl and wool with vat dyes, indigosols, sulfur dyes, combination of naphthols and bases, and acetate dyes (including black dyeings), respectively.

Dyeing of Wolcrylon

K.-F. Neuendorff. *Textil- u. Faserstofftech. 4, No. 7:* 412 (1954); *in German.* Summary in *Brit. Cotton Ind. Research Assoc. 34:* 817 (October 30, 1954).

Fiber damage during printing with vat dyes

K. Niepraschk. *Textil- u. Faserstofftech. 4, No. 7:* 413-415 (1954); *in German.* Summary in *Brit. Cotton Ind. Research Assoc. 34:* 819 (October 30, 1954).

Improved wash fastness of acetate-rayon blends

V. S. Salvin, A. B. Conciatori, R. A. Walker, G. C. Ward and F. Fortess (Celanese Corp. of America). *Am. Dyestuff Reptr. 43:* P764-P770 (November 8, 1954).

Dye-fixation processes were applied to acetate-rayon and acetate-rayon-nylon blends to give improved wash fastness of a level fast to machine

washing at 120-130°F, with minimum shade change, and with marked reduction in staining. The shirting and slack fabrics retained satisfactory appearance and dimensions without significant attrition after 25-50 washes. Principles underlying the fixation of acetate dyes by formaldehyde resins and copper fixatives are presented. The process makes use of selected, commercially available, acetate (disperse) dyes of high intrinsic wash fastness and fixation response in addition to fixable rayon dyes. Resins that can penetrate the acetate fibers show optimum results. The fixation takes place in a finishing treatment with urea-formaldehyde resins and copper fixations applied by conventional procedures on regular finishing equipment. 5 references.

Is dichromate bad for wool?

C. Blau. *Z. ges. Textil-Ind. 55:* 754 (1953); *in German.* Through *Chem. Abstracts 48:* 14215 (November 25, 1954).

In using $K_2Cr_2O_7$ for wool dyeing the damaging effect is reduced when a fresh $K_2Cr_2O_7$ bath is used for each batch with additions of split protein. Better use of the Cr is effected with addition of acids of which HCOOH, AcOH, $(COOH)_2$ and lactic acid have the mildest effect.

Modern dyeing machinery for man-made fibers, yarns and fabrics

A. G. Tyler. *Brit. Rayon & Silk J. 31:* 69-77 (October, 1954).

Typical examples of post-war progress in wet-processing machinery with particular reference to the influence of stainless steel in the evolution of plant design and techniques.

Physical chemistry of dyeing

T. Vickerstaff. London, Oliver and Boyd (for Imperial Chemical Industries Ltd.), 1954. 514 pages. 2nd edition. Through *Brit. Cotton Ind. Research Assoc. 34:* 778 (October 15, 1954).

This new edition has been revised generally and has added to it chapters on vat dyeing and on the dyeing of the newer synthetic fibers (Orlon, Terylene, Vinyon); the chapters dealing with the kinetics of dyeing have been largely rewritten.

Development of Naphtol AS dyes

A. Zitscher. *J. Soc. Dyers Colourists 70:* 530-539 (December, 1954).

The history and the development of azoic dyes based on the arylamides of *o*-hydroxycarboxylic acids are reviewed. The relation between the chemical constitution of an azoic dye and its substantivity on cellulose is discussed, and the paper concludes with an account of stabilized diazo components. 9 references.

Influence of the substrate upon the light fading of azo dyes

H. R. Chipalkatti, N. F. Desai, C. H. Giles and N. Macaulay. *J. Soc. Dyers Colourists 70:* 487-501 (November, 1954).

Several series of simple phenylazonaphthalene dyes, both water-soluble and water-insoluble, were applied to a variety of substrates, and the relative fading rates of the dyes in each series on each substrate compared with the Hammett *o-* values of meta and para substituents in the benzene nucleus. The fading rates on transparent substrates were measured spectrophotometrically and those on opaque substrates by visual judgment, the two procedures giving concordant results. 37 references.

New and old metal complex dyes

F. Weber. *SVF Fachorgan Textilveredlung. 9, No. 8:* 371-378 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 859 (1954).

In this review, the author discusses the products marketed by Ciba, BASF, Geigy, Sandoz, ICI, du Pont, General Dyestuff Corporation, Bayer and Hoechst, describes their properties and uses and gives a table, in which the dyes are divided into six groups and which contains the names of manufacturers, the affinity, solubility in water, metal content in the molecule, dyeing method, pH of the dye-bath, and advantages and disadvantages of the individual products.

Application of an integration dyeing method at high temperature

L. Drijvers. *Melliand Textilber. 35:* 1355-1358 (December, 1954); *in German.*

The author describes a high-temperature dyeing method based on the principle of maintaining the dyestuff concentration in the dyebath as low as possible throughout the whole dyeing process. This is achieved by slow and gradual addition of dyestuff to the dyebath. The method is particularly beneficial for the application of dyestuffs with high affinity for the fiber and slow rate of diffusion. 4 references.

Influence of temperature on vat-dye application

M. R. Fox (Arnold Hoffman and Co., Inc.). *Am. Dyestuff Reptr. 43:* P785-P787, P796 (November 22, 1954).

This paper reviews the progress made in the commercial application of laboratory-gained

knowledge on the effects of temperature on vat-dye application. A broad outline of process development is given, together with comments on the advantages and limitations of applying the sodium salts of vat-dye leuco compounds to cellulose at temperatures of 70-270°F. Some collected data on diffusion and vatting rates are quoted, and the effects of heat on vat-dye dispersions and the high-temperature soaping of vat dyeings are described. 8 references.

Work of dyestuffs at high temperature

M. R. Fox (Imperial Chemical Industries Ltd). *Can. Textile J. 71:* 51-55 (December 3, 1954).

The introduction of polyester and acrylonitrile fibers has encouraged considerable work in the field of high temperature dyeing. Few dyes have yet been tailor-made to be resistant to high temperature application. The various dye groups are explained. 4 references.

The practice of spinning colored cotton yarn

R. Riedel. *Textil- u. Faserstofftech. 4:* 492-493 (August, 1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 847 (1954).

In order to produce satisfactory yarn, the cotton tufts are required to be open and soft; the natural cotton wax lost during boiling must be replaced by adding a suitable softener to the rinsing bath so as to restore the spinnability of the undyed cotton. A method, which has proved satisfactory in practice, is described in detail.

Vat dyes on cyanoethylated cotton

American Cyanamid Co. *Textile World 105:* 105 (January, 1955).

Cyanoethylated cotton can be dyed with vat dyes by controlling caustic and temperature. No large-scale dyeings have been attempted to date because of lack of material.

Study of the dyeing of Dacron fabrics by the carrier method

Z. L. Collins, L. G. Darby, G. A. Harris and J. H. Howell. *Am. Dyestuff Reptr. 44:* P29-P30 (January 3, 1955).

An experimental laboratory study of seven carriers for the application of disperse (acetate) dyes on Dacron polyester fiber has shown that one carrier or one combination of two carriers of those tried does not always give the best results. Fifteen per cent of betanaphthol, 20% of benzoic acid, 15% of benzyl alcohol, or a combination of 5% of benzoic acid and 10% of betanaphthol owf gave the best sorption of disperse dye according to the particular dye employed in the experiment. Betanaphthol may be used alone and acetophenone used to increase the effectiveness of Dowicide A and betanaphthol as carriers.

Dacron/wool now dyed at high temperatures

Modern Textiles Mag. 36: 43, 88 (January, 1955).

Details are given of a successful method developed by the duPont company for dyeing wool and Dacron blends at elevated temperatures without carriers and without any impairment of the physical and aesthetic properties of the wool.

Spun-dyed viscose

L. L. Walmsley (American Viscose Corp.). *Am. Dyestuff Reptr. 43:* P790-P792 (November 22, 1954).

Spun-dyed viscose rayon textile, in which water-insoluble, fast-to-light pigments are added to the viscose (cellulose xanthate solution) before it is spun into rayon, has the following advantages over rayon that is dyed after spinning: closer matches from lot to lot, better penetration, better levelness, and better light- and wet-fastness properties. These advantages will lead to the production of a spun-dyed rayon in America as it has in England and on the Continent, especially of staple fabrics, which generally need to be faster to washing than filament fabrics. The author discusses how certain economic and practical considerations, however, will operate to bring a balance between spin dyeing and piece dyeing in the rayon industry in spite of the better quality of spin dyeing.

Some practical aspects in the dyeing of melton ski suitings containing re-used wool

H. J. Monahan. *Dyestuffs 40:* 259-263 (December, 1954).

Dyeing of felt

D. Haigh. *J. Soc. Dyers Colourists 70:* 539-553 (December, 1954).

In part it is shown that, under practical dyeing conditions, the quality of hat felt, as represented by tensile strength and density, is affected by time and temperature of dyeing, and degree of agitation in the dyeing machine. Types of dyeing machines are compared, and the superiority of the cone dyeing machine is established, especially at the lower temperatures. In part 2 the quality of wool felt, as judged by tensile strength and density, is shown to be influenced by the stage at which dyeing takes place during the felting sequence, the type of dye used, and the time of

dyeing. A series of laboratory experiments, using the Furness milling stocks for felting the wool patterns, indicated that the best results are obtained by dyeing at as early a stage as possible for short times with dyes of the acid milling type. The practical limitations are discussed, and preliminary results from factory trials which confirm these findings are quoted. 15 references.

Roller printing of cellulose acetate fabric

W. B. Miller (British Celanese Ltd). *Dyer 112:* 1015-1021 (December 10, 1954).

Engraving; fit of the pattern; disperse, vat and acid dyes; steaming, and washing are discussed in this general survey.

Printing of textiles with sulfur dyes

H. Schonefeld. *Textil- u. Faserstofftech. 4, No. 7:* 415-420 (1954); *in German.* Summary in *Brit. Cotton Ind. Research Assoc. 34:* 818 (October 30, 1954).

Printing technique with mixtures of naphthols and developers, and suitable thickening agents

J. Hausermann. *Textil-Rundschau 9, No. 8:* 395-399 (1954); *in German.* Summary in *Brit. Cotton Ind. Research Assoc. 34:* 818 (October 30, 1954).

Roller printing at 150 yds./min.

A. Deck. *Skinner's Silk & Rayon Record 28:* 1165 (November, 1954).

The model 54 French Printmaster is described and illustrated.

MECHANICAL PROCESSES D 3

Convertible tenter

Textile Ind. 119: 130-133 (January, 1955).

Features of the Famatex tenter and mill experience in its use are discussed.

DRYING D 4

Electric heating in textile finishing

J. McCreary. *Can. Textile J. 71:* 47-49 (December 31, 1954).

The development and use of the calrod electric heat setting unit for nylon and the one pass system are discussed.

High-speed fabric shrinking machine

Sucal Ltd. *Textile Wkly. 54:* 1880-1882 (December 10, 1954); *Dyer 112:* 1099-1103 (December 24, 1954).

The fundamental principle of the Sucalter shrinking system is a passage of relaxed fabrics through a specially designed steaming area, instantaneous drying by infra-red projection, together with cold setting and stabilization, enabling processed materials to be put to immediate use. Features are described. Diagram.

The use of nozzle drying during finishing of fabrics with resins

H. Jorder. *Reyon, Zellwolle u. Chemiefasern 32:* 481-482 (August, 1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 861 (1954).

By using the nozzle-drying system in which the drying medium consists of superheated (unsaturated) steam, it was found that, at the temperatures used, there are no risks of damage to the fabric and no qualitative disadvantages as compared with normal drying. Even when drying woolen fabrics at steam temperatures of 145°C, no detrimental effects but, on the contrary, improvements in the feel of the fabric were observed. There is less danger of resin migration on to the surface than in the case of normal drying, and the temperature of the fabric during drying and condensation in the nozzle drier can be controlled with the same accuracy as in other driers.

Drying by superheated steam. Part 2. Practical considerations

G. S. Egerton. *Brit. Rayon & Silk J. 31:* 49-52 (November, 1954).

Details are given of the Vits (Vits Elektro GmbH) system.

High-efficiency flat drying frame

H. Krantz Sohne. *Z. ges. Textil-Ind. 56. No. 14:* 904 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 781 (October 15, 1954).

Constructional details of the machine and illustrations are given. The main driving arrangement is provided with large, reversible sprocket wheels to run horizontally, and adjusted for a simple clip- or nipper-chain or for a clip-chain combined with foldable pinledges. The wheel velocity is adjustable, and the machine is well insulated to prevent heat losses.

Stretching and drying machines

J. Hueber. *Textil-Praxis 9, No. 6:* 550-554 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 781 (October 15, 1954).

The problems involved in convection-drying, with air or steam as drying medium, are discussed, and dynamic and static air circulation systems as well as radial and axial blowers are described.

TESTING AND MEASUREMENT E

Direct construction of nomographs from tables

W. H. Burrows. *Ind. Eng. Chem. 47:* 33-37 (January, 1955).

Although the construction of nomographs from formulas is well standardized, construction directly from a table of values involves poorly understood techniques. This paper presents practical methods of procedure for the direct construction of such charts. The preparation of the log mean temperature difference nomograph is used to illustrate the symmetrical case. The development for the general case—unsymmetrical tables—not only includes the preparative method but also outlines means of selecting a suitable scale function for the dependent variable. 5 references.

The electron microscope

Fibres 15: 403-404, 409 (December, 1954).

The use of the electron microscope in textile research is described.

Instruments for textile testing and process control

Brit. Rayon and Silk J. 31: 68-71 (December, 1954).

Oil extraction apparatus

J. Lomax. *Textile Recorder 72:* 94 (December, 1954).

A new extractor for determination of the oil content of worsted yarns has been designed to overcome the disadvantages but preserve the advantages of the soxhlet apparatus.

Some applications of extreme value methods

E. J. Gumbel and J. Lieblein. *Am. Statistician 8:* 14-17 (December, 1954).

A discussion of statistical theory and application to extreme value distributions, with examples from tensile strength, atmospheric pressure, and other series exhibiting extreme values. The statistical methods are suitable for use in better understanding tensile strength and related data in the textile industry.

FIBERS E 1

Determination of crimp in textile fibers

F. Ecochard (Société Rhodiaceta, France). *(Letter to the editor). J. Textile Inst. 45:* P675-P677 (November, 1954).

An optical method for determining crimp is described.

Effect of oil and other changes on the results obtained by the air-flow method for measuring wool fiber diameter

N. Richards. *J. Textile Inst. 45:* P661-P666 (November, 1954).

The effect of changes in the amount of oil present on fibers on results obtained by the air-flow method of fiber diameter measurement is calculated and the results suggest that the oil is not distributed in a uniform layer. The effect of changes in porosity and other constants of the apparatus are also calculated and results shown to agree reasonably with practice. 3 references.

Importance of low beam intensity in the examination of fibers by reflection electron microscopy

J. A. Chapman and J. W. Menter. *Research 7:* S47 (August, 1954). Through *Brit. Cotton Ind. Research Assoc. 34:* 868 (1954).

An electron microscopical technique for the examination of complete fibers is described. The electron microscope is modified to operate in reflection and an electron beam of very low intensity must be used. Photomicrographs of Orlon and viscose rayon fibers obtained by this technique are reproduced.

New data on the pilosity coefficient of fibers

A. Barella. *Bull. Inst. Textile France No. 46:* 69-75 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 868 (1954).

The two different basic theories defining the pilosity coefficient are studied and an attempt is made to establish analytically a relationship between the "hairiness rating" indicated by Onions and Yates (I.W.T.O. Tech. Comm., Lisbon, 1953) and the respective pilosity coefficients.

YARNS E 2

An accurate balance for the determination of the numbers of slivers, rovings and yarns according to the Tex-system

J. Blokland-Visser and A. la Fleur. *Enka Breda Rayon Rev. 8:* 188-193 (October, 1954); *in Dutch.*

In this article a description is given of a numbering balance developed by N. V. Onderzoekingsinstituut Research. With the aid of 5 scale divisions the numbers of slivers, rovings and yarns, expressed in Tex, can be accurately determined. Special attention is paid to the advantages of a direct numbering system. The technical details of this balance are described in detail.

Continuous yarn testing

Textile Wkly. 54: 1767, 1774 (December 3, 1954).

Some practical implications of continuous yarn testing are discussed.

Electronic measurement of irregularity in continuous filament yarns

P. H. Walker. *(Letter to the editor). J. Textile Inst. 45:* P678-P680 (November, 1954).

Insertion of extra twist in the yarn as it passes through the condenser (the twist being removed after completion of measurement) helps give more accurate irregularity measurement.

Electronic measurement of the moisture content of one running rayon thread

V. E. Gonsalves. *Enka Breda Rayon Rev. 8:* 168-176 (October, 1954); *in Dutch.*

A description is given of an electronic measuring method with the aid of which the moisture content of one running rayon thread can be determined in an easy, rapid and accurate way.

Ends-down test

M. C. Gross. *Textile Ind. 119:* 121-123 (January, 1955).

Practical directions are given on how to make ends-down tests, how often to make them, and how to benefit from them. Tables.

Electric card balance with an optical and acoustic signalling device and its effect on the regularity of roving

Hellgartner & Pfanzelt. *Textilmasch. Rundschau 2, No. 4:* 81-83 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 759 (October 15, 1954).

The device developed by Hellgartner & Pfanzelt, Freising, Upper Bavaria, and fitted to a balance feeder of the MAK-Maschinenbau AG, Kiel, is described and illustrated. The card balance oscillates freely and is able to respond accurately to weight of the fiber supply which is regulated by a neutral strong electromagnet. When the balance is full, the electromagnet is actuated by means of a simple, durable switch on the balance beam and stops rapidly the needle feed-lattice. A control switch is provided for controlling the position of the balance beam switch immediately before the balance is emptied, and any deviations in the weight required are signalled optically and acoustically for 5 seconds.

Works control in the carding room

B. Fischer. *Textil-Praxis 9, No. 5:* 423-427 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 760 (October 15, 1954).

It is shown how the performance of carding machines can be controlled by means of a high frequency regularity tester (Textronograph), and how interferences and causes of faults can be determined. The device can also be used to check the correct adjustment of the doffer, and to show the relationship between periodically occurring variations in the cross-section of the card slivers and the eccentricity of the doffer.

Capacitance-type unevenness tester

Electronic Associates Ltd. *Textile World 104:* 136 (December, 1954).

The Sigma unevenness tester measures the unevenness of yarn, roving, sliver, and top. It incorporates an integrator, which gives standard deviation and coefficient of variation on a specific sample of yarn. The integration is performed by summing the squared deviations from the actual mean.

Causes and measurement of yarn irregularity and its effect on cloth appearance

C. Schubert. *Textil-Praxis 9, No. 7:* 641-646 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 828 (October 30, 1954).

An attempt is made to discuss the problem from the practical standpoint. Methods of measuring yarn regularity are reviewed and the use of variance-length-curves for evaluating the relationship between yarn regularity and the appearance of woven and knitted fabrics is discussed. In addition to other control methods, the author points out the advantages of using statistical control cards.

Determination of yarn regularity on the basis of random fiber arrangement

W. H. Schneider. *Textil-Praxis 9, No. 6:* 535-536 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 788 (October 15, 1954).

This is essentially a criticism of the article by H. Kob on optimum regularity of yarn, pointing out that the statistical method based on the use of dice is not applicable to every problem of theoretical yarn irregularity, and that in certain rare cases the use of the Poisson table is preferable.

Some observations on chemical changes and incrustations in textiles from viscose rayon after prolonged wear tests

T. N. Kleinert, V. Mossmer and W. Wincor. *Textil-Rundschau 9, No. 8:* 393-395 (1954); *in German.* Summary in *Brit. Cotton Ind. Research Assoc. 34:* 828 (October 30, 1954).

Testing of textiles: measurement of the crease relaxation angle in textile fabrics

German Standards Committee. *Faserforsch. u. Textiltech. 5, No. 6:* 269-270 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 789 (October 15, 1954).

The specification, DIN 53 890, comprises the definition of the crease relaxation angle, number and preparation of the samples, description of the testing apparatus and the testing method (a) application of the load, (b) measurement of the angle, evaluation of the results, error limits, and the test report.

Detection and quantitative determination of damages to cotton

H. Petzold. *Textil- u. Faserstofftech. 4, No. 6:* 358-363 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 785 (October 15, 1954).

In this review, the author discusses damaging factors to which the raw material is subjected during storage and then during spinning, weaving, knitting and finishing, and, as finished product, during storage and use. After these theoretical considerations, he outlines methods for qualitative and quantitative determination of the damages to cotton; they comprise: mechanical methods (determination of tensile strength and elongation at break), physico-chemical methods (swelling reaction, determination of the degree of polymerization and yellowing test), and chemical methods (determinations of the reducing power, acid- and salt-forming properties of the oxycellulose, alkali-solubility, and behavior towards substantive dyes).

FABRICS E 3

Aids to cloth analysis

G. Schallebaum. *Textile Recorder 72:* 89 (December, 1954).

A novel instrument which not only facilitates the analysis of cloth samples but provides automatic means of transferring the weave or design on to squared paper. It is suitable for pick counting, and examining and analyzing all kinds of fabrics; it can also be used in the designing of fancy patterns for dobby and jacquard looms.

Flammability and the law

H. E. Hager (General Dyestuff Co.). *Am. Dyestuff Reptr. 43:* P788-P789 (November 22, 1954).

A history of flammability testing in the United States and the need that arose because of the many deaths resulting from burning clothing in the 1940's. Methods, equipment, and state and Federal legislation on the subject are briefly reviewed.

Need for a standardized procedure for measuring reflectance of detergency fabrics

R. B. Diaz, H. Paitchel and J. A. Woodhead. *ASTM Bull. No. 202:* 56-59 (December, 1954).

Certain variations in the procedure of measuring reflectance of detergency fabrics account for major discrepancies. This is quite evident among interlaboratory comparisons. These differences have been attributed to at least four factors: (1) fabric structure, (2) background, (3) fluorescence, (4) faulty lighting system in photometers.

INDUSTRIAL ENGINEERING F

Modern mill controls. Part 1. Modern mill organization

N. L. Enrick. *Modern Textiles Mag. 36:* 31, 46-48, 54 (January, 1955).

This is the first in a series of articles. It deals with the following aspects of modern mill organization: definition of sound mill management as the result of careful planning and effective control, the expression of plans in the form of standards, the means of maintaining standards through various mill controls applied to quality, waste, production and maintenance, and the organizational and administrative aspects of properly coordinating planning and control activities. Organization charts, flow charts, and specimen control reports and forms supplement the text material with actual examples from mill applications.

Profitability calculations simplified

S. Ruvkun. *Consulting Engineer 4:* 44-47, 72 (December, 1954).

Simplified graphic means are discussed for evaluating the profitability of a new venture, which take into account projected profit and loss, depreciation, estimated pay-out time, and effect of income tax rates.

MACHINERY AND MAINTENANCE F 1

Automatic control. Part 2

C. G. Booy. *Enka Breda Rayon Rev. 8:* 198-204 (October, 1954); *in Dutch.*

In this article a description is given of some control methods and related controllers and control valves. Finally the advantages and disadvantages of the electric, hydraulic, pneumatic and direct-acting controllers are mentioned.

Modernizing average 20,000 spindle combed cotton knitting yarn mill

R. J. McConnell. *Whitin Rev. 21:* 1-18 (November-December, 1954); *Am. Textile Reptr. 68:* 8-12, 38 (December 30, 1954).

The purpose of this study was to determine the increase in profits and the reduction in operating costs that would result from the modernization of the machinery in a mill considered to be typical in the combed cotton knitting yarn field. The original paper presented to the Combed Yarn Spinners Association is reproduced in full, with supplementary supporting data and diagrams.

QUALITY CONTROL F 3

Too much perfection in quality can sometimes become harmful

Am. Textile Reptr. 68: 91-93 (November 18, 1954).

Examples are given in which excessive uniformity of yarns, strength of fabric, and other usually desirable quality characteristics may be leading to losses because of excess cost of raw materials or unwarranted processing expenditures. A market research test is described for a fabric, which showed that the one with the most non-uniform yarns enjoyed the highest sales. The seeming contradiction is resolved in terms of consumer psychology and ideas that unevenness is associated with handwoven. As a result, lower cost raw materials, higher speeds, and increased job assignments could be used in the production of the fabric.

OTHER F 4

Slash reworkable waste

M. R. Harden. *Textile Ind. 119:* 103-107 (January, 1955).

This article discusses the various causes of reworkable waste, the cure, and the methods employed to handle such waste most profitably.

Wastage in the woolen industry

Platts Bull. 8, No. 8: 236-239 (1954).

Sources of waste in scouring, dyeing, opening, cleaning and blending, carding, spinning, and material handling are surveyed and suggestions made for their elimination.

SCIENCES G

PHYSICS G 2

The importance and elimination of electrostatic charges in textiles

A. Sippel. *Melliand Textilber. 35:* 831-835 (August, 1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 846 (1954).

In this review (fifty-one literature references) the author discusses the factors contributing to electrostatic charges on textiles and the relationships between the charges and the electrical resistance and normal moisture content of the fibers. The possibility of blending negatively and positively charged fibers is pointed out and various antistatic preparations are enumerated. Reference is also made to the possibility of making the room atmosphere conductive.

Infra-red primer

W. Lode. *Dyestuffs 40:* 253-258 (December, 1954).

This article provides a survey of the most important properties of infra-red radiation and explains how various dyed layers behave towards such radiation and how this behavior can be used. Translated and reprinted from the *Melliand Textilber. 35:* 68-69 (January, 1954).

MISCELLANY H

Plastics: the year 1954 in review

Modern Plastics 32: 125-142, 208-222 (January, 1955).

A review with 523 references.

Textile research in 1954

J. B. Goldberg. *Am. Textile Reptr. 69:* 22-27, 33 (January 13, 1955); 17, 41-44 (January 27, 1955).

Textiles in 1954

M. Harris and J. Krasny (Harris Research Laboratories, Inc.). *Chem. Eng. News 33:* 117-118 (January 10, 1955).

A review of the chemical aspects of textile science and technology during 1954.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

Col. 81

YARN PRODUCTION B

Thread cleaner for textile machines

S. Furst (to Walter Reiners, Germany). USP 2 697 267, December 21, 1954

OPENING, PICKING, FIBER PREPARATION B 1

Lap-forming apparatus

J. J. Rieter and Cie, AG (Switzerland). BP 711 599, July 7, 1954. Through *BCIRA 34:* 848 (1954).

CARDING AND COMBING B 2

Drive for combers

J. R. Foster and R. S. Cartwright (to T. M. M. (Research) Ltd). BP 711 182, June 23, 1954. Through *BCIRA 34:* 848 (1954).

Comb box for carding machines

C. E. Pittman. USP 2 698 465, January 4, 1955.

DRAWING AND ROVING B 3

Apparatus for detecting and correcting irregularities of thickness of a sliver (relay mechanisms)

G. F. Raper (to T. M. M. (Research) Ltd). BP 710 957, June 23, 1954 and BP 711 501, July 7, 1954. Through *BCIRA 34:* 849 (1954).

Supporting and weighting means for the upper rollers of drafting apparatus

R. J. Summers, M. Markowicz, C. D. Peters and J. Osbaldeston (to T. M. M. (Research) Ltd). BP 711 425, June 30, 1954. Through *BCIRA 34:* 849 (1954).

Tape draw-frame roller

F. Dolling and C. L. Kumpers (Germany). USP 2 696 643, December 14, 1954.

SPINNING, WINDING, TWISTING B 4

Bobbin building motions

E. Stammwitz (Germany). BP 710 101, June 9, 1954. Through *BCIRA 34:* 851 (1954).

Col. 82

Tension or guide pulleys, particularly for the tape drives of textile spindles and the like

W. Stahlecker GmbH (Germany). BP 709 633, June 2, 1954.

Textile spinning, twisting or preparing machines of great length formed from individual sections

Schiess AG (Switzerland). BP 708 335, May 5, 1954.

Traveler rings having a cast iron core on which a hard layer of chromium is deposited electrolytically

J. J. Rieter & Co. AG (Switzerland). BP 705 579, March 17, 1954.

Use of a hydraulic servomotor for movements of the ring rail in building a cop

Hagenuk Hanseatische GmbH (Germany). BP 706 297, March 24, 1954.

Cop winding machine on which a full cop is automatically doffed

J. P. Mackie (to James Mackie & Sons Ltd). BP 704 695, February 24, 1954.

Magazine cone creels

R. S. Hatton and J. Thompson (to Cords Ltd). BP 709 295, May 19, 1954.

Method and apparatus for controlling the tension in a continuously-traveling filamentary body

J. B. Seed and M. Gould (to Imperial Chemical Industries Ltd). BP 709 104, May 19, 1954.

Textile winding spindles

E. Findlow (to Ernest Scragg & Sons Ltd). BP 704 947, March 3, 1954.

Two-bladed slub catcher and yarn clearer

T. Fishwick and V. G. Van Colle (to Manchester Metal Works Ltd). BP 709 138, May 19, 1954.

Yarn building motions

N. Hooper (to Tweedales & Smalley Ltd). BP 709 512, May 25, 1954.

Yarn guiding device which, on a package winding machine of the reciprocating traverse type, will wind a package with similar or different tapers at opposite ends of the package

A. MacIver and P. L. Hobourn (to Hobourn Aero Components Ltd). BP 708 332, May 5, 1954.

Builder motion in which the ring rail is accelerated during the building of the tip of the cop

E. Stammwitz. BP 710 097, June 9, 1954. Through *BCIRA 34:* 851 (1954).

Cap-spinning machines modified to wind a transfer tail on their bobbins

A. J. Ruff, P. S. Davies and W. M. Griffiths (to Courtaulds Ltd). BP 710 150, June 9, 1954. Through *BCIRA 34:* 850 (1954).

Condenser bobbins

Schiess AG (Switzerland). BP 710 211, June 9, 1954. Through *BCIRA 34:* 850 (1954).

Device for reducing the balloon in spinning

I. Frenkel (France). BP 710 762, June, 16, 1954. Through *BCIRA 34:* 852 (1954).

Direct spinning apparatus

W. Luttgen Kommanditgesellschaft (Germany). BP 710 521, June 16, 1954. Through *BCIRA 34:* 850 (1954).

Double twisting spindle with a compound spindle shaft

Bramer Maschinenfabrik AG (Germany). BP 711 896, July 14, 1954. Through *BCIRA 34:* 853 (1954).

Expansible mandrel for uptwisters

V. G. Van Colle and T. Fishwick (to Manchester Metal Works Ltd). BP 710 164, June 9, 1954. Through *BCIRA 34:* 853 (1954).

Fluted rollers for spinning machinery

L. Kuster (Germany). BP 710 153, June 9, 1954. Through *BCIRA 34:* 849 (1954).

Improvements to the internal split ring brake assembly for braking spindle wharves

N. Hooper (to Tweedales and Smalley Ltd). BP 710 840, June 16, 1954. Through *BCIRA 34:* 852 (1954).

Lifting and lowering arrangement for movable rails

Schiess AG (Switzerland). BP 710 753, June 16, 1954. Through *BCIRA 34:* 851 (1954).

Lubricating device for spinning spindles

Hispano Suiza (Suisse) Soc. Anon. BP 711 649, July 7, 1954. Through *BCIRA 34:* 852 (1954).

Mountings for spindles

E. Findlow (to Ernest Scragg and Sons Ltd). BP 710 450, June 9, 1954. Through *BCIRA 34:* 851 (1954).

Speed control device for spinning frames

H. Deutsch. BP 711 746, July 7, 1954. Through *BCIRA 34:* 852 (1954).

Suction apparatus for broken threads in spinning

H. Thoma. BP 711 918, July 14, 1954. Through *BCIRA 34:* 852 (1954).

Yarn package building motions

N. Hooper (to Tweedales and Smalley Ltd). BP 711 838, July 14, 1954. Through *BCIRA 34:* 851 (1954).

Bobbin ejector for bobbin winding machines

F. L. Townsend (to Barber-Colman Co.). USP 2 698 720, January 4, 1955.

Bobbin transfer mechanism

B. A. Peterson (to Barber-Colman Co.). USP 2 696 901, December 14, 1954.

Card room bobbin

C. G. Stover. USP 2 697 565, December 21, 1954.

Centrifugal clutch driving connection (twisting spindle)

G. Curtis (to Courtaulds Ltd). USP 2 697 561, December 21, 1954.

Scavenger roll

S. E. Nichols and R. G. Jervis. USP 2 697 906, December 28, 1954.

Spindle mounting

E. D. Meadows (to Meadows Mfg. Co.). USP 2 696 707, December 14, 1954.

Textile winder

N. E. Klein (to Deering Milliken Research Trust). USP 2 697 560, December 21, 1954.

Twister mounting

I. S. Roberts (to American Viscose Corp.). USP 2 698 772, January 4, 1955.

FABRIC PRODUCTION C

Sheet tearing table

A. Kosek (to Naumkeag Steam Cotton Co.). USP 2 698 659, January 4, 1955.

WARPING, SLASHING, YARN PREPARATION C 1

Combined slub detector and stop motion device for winding

H. Spengler. BP 711 688, July 7, 1954. Through *BCIRA 34:* 855 (1954).

Sizing agent for nylon

Société Rhodiaceta (France). BP 710 587, June 16, 1954. Through *BCIRA 34:* 856 (1954).

Supporting hanks for winding

C. A. Freeland (to J. Rawson and Sons Ltd). BP 711 267, June 30, 1954. Through *BCIRA 34:* 855 (1954).

Yarn-supply creels

W. J. Fisher and T. Eccles (to British Celanese Ltd). BP 710 503, June 16, 1954. Through *BCIRA 34:* 855 (1954).

Casein-copolymeric styrene-maleic anhydride type compositions for and method of sizing textile warp yarns

E. H. Rossin (to Monsanto Chemical Co.). USP 2 697 672, December 21, 1954.

Slashing apparatus

A. L. Park (to Saco-Lowell Shops). USP 2 696 653, December 14, 1954.

Warp worm for drawing-in machines

F. L. Townsend (to Barber-Colman Co.). USP 2 696 654, December 14, 1954.

WEAVING C 2

Cam-operated shedding mechanism

Sulzer Frères Soc. Anon. (Switzerland). BP 711 414, June 30, 1954. Through *BCIRA 34:* 856 (1954).

Circular loom with non-positively driven shuttles

Qualitex-Société Dunod and Cie (France). BP 710 359, June 9, 1954. Through *BCIRA 34:* 858 (1954).

Circular rotary pirn battery

E. Bailey (to John Stansfield and Son Ltd). BP 710 114, June 30, 1954. Through *BCIRA 34:* 856 (1954).

Loom picker made from layers of nylon, compressed and bonded together

R. Walton and F. S. Walton (to Thomas & John Walton Ltd). BP 708 122, April 28, 1954.

Loom shuttle guard

A. Pattram (to Walter Pollard Ltd). BP 709 013, May 12, 1954.

Loom shuttle propulsion

J. B. Van Burleigh (Netherlands). BP 709 032, May 12, 1954.

Loom swells

F. Phillip. BP 708 677, May 5, 1954.

Loom weft cutter

E. Bailey (to John Stansfield & Sons Ltd). BP 708 743, May 12, 1954

Cutting mechanism for carpet looms

J. W. Turton (to Brintons Ltd). BP 710 305, June 9, 1954. Through *BCIRA 34:* 857 (1954).

Loom shuttle guard

T. Swain. BP 710 120, June 9, 1954. Through *BCIRA 34:* 857 (1954).

Shuttle box mechanism for looms

M. V. Wiele (Belgium). BP 711 935, July 14, 1954. Through *BCIRA 34:* 857 (1954).

Temple weft cutter

F. Chambers. BP 710 092, June 9, 1954. Through *BCIRA 34:* 857 (1954).

Thread gripping devices for gripper loom shuttle

Sulzer Frères Soc. Anon. BP 711 638, July 7, 1954. Through *BCIRA 34:* 857 (1954).

Transfer mechanism for gripper shuttles

Sulzer Frères Soc. Anon. (Switzerland). BP 710 126, June 9, 1954. Through *BCIRA 34:* 857 (1954).

Warp crossing means for circular looms

Saint Frères Soc. Anon. (France). BP 710 159, June 9, 1954. Through *BCIRA 34:* 858 (1954).

Check strap for looms

H. M. Bacon (to the Dayton Rubber Co.). USP 2 698 032, December 28, 1954.

Circular loom

C. A. Caldes. USP 2 696 836, December 14, 1954.

Circular loom

C. Christiansen and G. O. K. Rusch (Norway). USP 2 696 837, December 14, 1954.

Double comb beat-up mechanism

F. S. Melograna. USP 2 696 843, December 14, 1954.

Filling thread cutting and gripping device

E. C. Alix and H. A. Wilson. USP 2 696 844, December 14, 1954.

Loom for hand weaving

R. Purrington. USP 2 696 838, December 14, 1954.

Loom harness

V. C. Hassold (to Steel Heddle Mfg. Co.). USP 2 697 454, December 21, 1954.

Loop rug forming attachment for looms

J. R. Hart. USP 2 698 634, January 4, 1955.

Narrow web loom apparatus and method for treating elastic webbing

C. F. Libby. USP 2 696 845-46, December 14, 1954.

Picker guide for looms

E. J. Bullard (to the Bullard Clark Co.). USP 2 696 842, December 14, 1954.

Profile metal element made of a number of welded component parts, for frames of heddle shafts

P. Formenti (Italy). USP 2 697 453, December 21, 1954.

Reed frame

R. H. Schuerhoff. USP 2 696 839, December 14, 1954.

Shuttle and shuttle-operating mechanism for looms

J. Berkowitz (Guatemala). USP 2 696 840, December 14, 1954.

Sweepstake with resilient bearing and means to prevent splitting of outer member

L. R. Heim (to the Heim Co.). USP 2 696 841 December 14, 1954.

KNITTING C 3

Electrical stop motion for knitting machines

S. N. S. Mee (to Parmeko Ltd). BP 710 255, June 9, 1954. Through *BCIRA 34:* 858 (1954).

Circular knitting machine

E. J. Lerch, W. M. Thompson and J. L. Hornberger (to Laurel Hosiery Co.). USP 2 698 530, January 4, 1955.

Circular knitting machine

C. F. Miller (to Jacquard Knitting Machine Co., Inc.). USP 2 696 720, December 14, 1954.

Circular knitting machine

A. Shortland (to Mellor Bromley and Co. Ltd). USP 2 697 336, 338, December 21, 1954.

Feed finger for circular knitting machines

F. Scarborough. USP 2 697 924, December 28, 1954.

Full-fashioned hosiery and method of making

P. F. Kohler and F. K. Kohler. USP 2 697 923, December 28, 1954.

Knitting machine

P. W. Bristow (to Scott and Williams Inc.). USP 2 698 531, January 4, 1955.

Knitting machine change speed mechanism

A. M. Brown and G. D. Stibbe (to G. Stibbe and Co. Ltd). USP 2 697 337, December 21, 1954.

Knitting machine stop motion

R. W. Shepard. USP 2 696 722, December 14, 1954.

Latch type knitting needle

A. Shortland (to Mellor Bromley and Co. Ltd). USP 2 696 721, December 14, 1954.

Pattern mechanism for circular knitting machine

F. D. Rickert and W. R. Post (to Infants Socks, Inc.). USP 2 698 532, January 4, 1955.

Yarn selector mechanism

W. Larkin (to Fidelity Machine Co. Inc.). USP 2 698 533, January 4, 1955.

FABRICS C 4

Papermakers' felts of cotton and nylon

E. Race. BP 710 078, June 9, 1954. Through *BCIRA 34:* 858 (1954).

Fluted fabric and method of making

W. E. Cusick. USP 2 698 009, December 28, 1954.

Locked pile fabric

H. F. Frith, Jr. (to Hagin Frith and Sons). USP 2 696 723, December 14, 1954.

Method and apparatus for making pile fabric

L. A. Runton and E. H. Shattuck (to Alexander Smith, Inc.). USP 2 698 044-45, December 28, 1954.

Method of making bonded mat of glass fibers

R. E. Schwartz (to Vibradamp Corp.). USP 2 697 056, December 14, 1954.

Nonwoven fabric

I. S. Ness and R. V. Lints (to Chicopee Mfg. Corp.). USP 2 697 678, December 21, 1954.

Production of thick laminated, fibrous structures

J. d'A. Clark (to A. B. Dick Co.). USP 2 698 271, December 28, 1954.

Sieve for the sifting of materials

E. Cotterill and E. Robinson (to Courtaulds Ltd). USP 2 696 847, December 14, 1954.

FINISHING AND CHEMICAL PROCESSING D

Apparatus for heat treatment of fabric

G. F. Grimsley (to Grimsley and Co. (Leicester) Ltd). BP 710 253, June 9, 1954. Through *BCIRA 34:* 867 (1954).

Crimping nylon yarn

Heberlein and Co. AG (Switzerland). BP 710 802, June 16, 1954. Through *BCIRA 34:* 853 (1954).

Method of producing highly porous absorbent fabric-like or chamois leather-like flexible sheet materials

C. L. Nottebohm (to Carl Freudenberg Kommandit-Gesellschaft). BP 710 082, June 9, 1954. Through *BCIRA 34:* 867 (1954).

CHEMICAL PROCESSES D 1

Increasing the crease-resistance of rayon fibers and fabrics

Phrix-Werke AG (Germany). BP 710 441, June 9, 1954. Through *BCIRA 34:* 867 (1954).

Stable, white oil-in-water emulsion, for use as a spinning oil

Anorgana Co. (Germany). BP 710 859, June 23, 1954. Through *BCIRA 34:* 847 (1954).

Apparatus for bonding nonwoven webs

R. W. Dougherty and H. P. Eichin (to the Visking Corp.). USP 2 698 574, January 4, 1955.

Finishing of textile materials

G. E. Niles (to Monsanto Chemical Co.). USP 2 698 264, December 28, 1954.

Mildew resistant textile products and processes

A. C. Weick (to Pacific Mills). USP 2 698 263, December 28, 1954.

Process and apparatus for liquid treatment of tow of continuous filaments

G. E. Moos, M. B. Clemmer and R. D. Carwell (to Celanese Corp.). USP 2 697 022, December 14, 1954.

Waterproof coated fabric and method of making

L. P. Dosmann, L. A. Ferguson and R. W. Strock (to United States Rubber Co.). USP 2 698 816, January 4, 1955.

DYEING AND PRINTING D 2

Process for dyeing cellulose fibers with direct-dyeing azo dyestuffs containing copper or nickel in complex union

Ciba Ltd. (France). BP 708 144, April 28, 1954.

Process for dyeing mixtures of wool and staple fibers of regenerated cellulose

Farbwerke Hoechst AG (Germany). BP 709 666, June 2, 1954.

Process for vat dyeing cellulosic textile materials in package form

H. B. Bradley and H. Wakefield (to Imperial Chemical Industries Ltd). BP 709 734, June 2, 1954.

Production of pigmented prints, impregnations and coatings on fibrous materials

Badische Anilin- und Soda-Fabrik (Germany). BP 709 954, June 2, 1954.

Vat coloration of cellulose acetate

G. D. Sutton and O. Boothby (to T. E. Marchington and Co. Ltd). USP 2 698 218, December 28, 1954.

MECHANICAL PROCESSES D 3

Rhythmically alternating tensile stress for improving strength of rayon tire cord

Vereinigte Glanzstoff-Fabriken AG (Germany). BP 710 708, June 16, 1954. Through *BCIRA 34:* 853 (1954).

Embossing apparatus for web material

F. C. Bower (to the Black Clawson Co.). USP 2 696 638, December 14, 1954.

Fabric napping mechanism

W. N. Hadley (to Parks and Woolson Machine Corp.). USP 2 698 476, January 4, 1955.

Friction-band calender

P. Deck and A. Rapp. USP 2 696 678, December 14, 1954.

System for napping textiles with teasels

J. B. Corson. USP 2 697 265, December 21, 1954.

DRYING D 4

Drying machines

R. R. Clegg (to Tomlinsons (Rochdale) Ltd). BP 709 911, June 2, 1954.

Method and machine for drying textiles

H. and W. Krantz (Germany). BP 709 972, June 2, 1954.

Stenter type drying machines

H. Kay (to Mather & Platt Ltd). BP 709 248, May 19, 1954.

Continuous drying of endless filaments

E. Torke, F. Koch and W. Diem (to Phrix-Werke AG). USP 2 698 489, January 4, 1955.

High frequency electric drying of yarn packages

P. H. Cannon and W. L. Love, Jr. (to Celanese Corp.). USP 2 698 488, January 4, 1955.

TESTING AND MEASUREMENT E

Nep potential meter

J. F. Bogdan and C. M. Asbill, Jr. USP 2 698 538, January 4, 1955.

YARNS E 2

Machines for testing laps (cutting and weighing)

J. L. Butterworth, E. Whittaker and A. Broadbent. BP 711 919, July 14, 1954. Through *BCIRA 34:* 848 (1954).

Apparatus for detecting and counting damaged filaments in yarn

D. A. Garrett (to Imperial Chemical Industries Ltd). USP 2 698 418, December 28, 1954.

FABRICS E 3

Fabric testing machine

E. R. Frederick. USP 2 696 736, December 14, 1954.

Services

Plant Location Studies
Investigation of Sites
Plant Layouts
Design of Buildings and Services
Design of Power and Steam Plants
Supervision of Construction
Economic Studies and Reports
Appraisals

LOCKWOOD GREENE

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10 Rockefeller Plaza

Spartanburg, S.C.
Montgomery Building

OVER 120 YEARS OF SERVICE IN TEXTILES